In the Claims

1. [Currently Amended] An electrical power source apparatus comprising:

a plurality of charging nodes;

a plurality of electrochemical devices individually coupled with a respective one of the charging nodes and individually configured to ~~assume~~ achieve an open-circuit condition in a substantially charged state; and

a plurality of shunting devices coupled with respective ones of the charging nodes and individually configured to shunt electrical energy from a respective one of the charging nodes after the respective electrochemical device ~~assumes~~ achieves the open-circuit condition.

2. [Original] The apparatus of claim 1 wherein at least one of the shunting devices is configured to shunt the electrical energy from the respective charging node to another charging node.

3. [Original] The apparatus of claim 1 wherein the shunting devices individually comprise a passive shunting device.

4. [Original] The apparatus of claim 3 wherein the shunting devices individually comprise a zener diode.

5. [Original] The apparatus of claim 1 wherein the electrochemical devices individually comprise a lithium cell having a lithium-mixed metal electrode.

6. [Original] The apparatus of claim 1 wherein the shunting devices are individually configured to electrically isolate the respective one of the charging nodes after shunting the electrical energy.

7. [Previously Presented] An electrical power source apparatus comprising:

an electrochemical device coupled with a charging node and a ground node;

a passive shunting device coupled with the charging node and the ground node in parallel with the electrochemical device and configured to shunt electrical energy from the charging node to the ground node; and

wherein the passive shunting device has a breakdown voltage threshold greater than an end-of-charge voltage of the electrochemical device.

8. [Original] The apparatus of claim 7 wherein the passive shunting device is configured to operate in a first operational mode to impede current flow and in a second operational mode to shunt the electrical energy, and wherein the apparatus is devoid of control circuitry to control operation of the passive shunting device in the first operational mode and the second operational mode.

9. [Original] The apparatus of claim 7 wherein the passive shunting device comprises a breakdown device.

10. [Previously Presented] The apparatus of claim 7 wherein the passive shunting device comprises a zener diode.

11. Canceled.

12. [Original] The apparatus of claim 7 wherein the passive shunting device is configured to shunt the electrical energy to another charging node adapted to supply electrical energy to another electrochemical device coupled in series with the electrochemical device.

13. [Original] The apparatus of claim 7 wherein the electrochemical device comprises a lithium cell having a lithium-mixed metal electrode.

14. [Original] A circuit comprising:

a charging node adapted to supply electrical energy to an electrochemical device to charge the electrochemical device, wherein the electrochemical device has an end-of-charge voltage;

circuitry adapted to supply electrical energy having a voltage greater than the end-of-charge voltage to the electrochemical device via the charging node after charging the electrochemical device to the end-of-charge voltage; and

circuitry configured to shunt electrical energy from the charging node after the supplying the electrical energy having the voltage greater than the end-of-charge voltage and after charging the electrochemical device to the end-of-charge voltage.

15. [Original] The circuit of claim 14 wherein the circuitry configured to shunt comprises a passive shunting device.

16. [Original] The circuit of claim 14 wherein the circuitry configured to shunt comprises circuitry with no control circuitry.

17. [Original] The circuit of claim 14 wherein the circuitry configured to shunt comprises a zener diode.

18. [Original] The circuit of claim 14 wherein the circuitry configured to shunt is configured to shunt the electrical energy to another charging node adapted to supply electrical energy to another electrochemical device coupled in series with the electrochemical device.

19. [Original] The circuit of claim 14 wherein the charging node and the circuitry are adapted to supply the electrical energy to the electrochemical device comprising a lithium cell having a lithium-mixed metal electrode.

20. [Original] A circuit comprising:

first circuitry adapted to apply electrical energy to an electrochemical device configured to operate as an open-circuit upon reaching a substantially charged state; and

second circuitry configured to shunt the electrical energy responsive to the electrochemical device operating as an open-circuit.

21. [Original] The circuit of claim 20 wherein the second circuitry comprises a passive shunting device.

22. [Original] The circuit of claim 20 wherein the second circuitry comprises a zener diode.

23. [Original] The circuit of claim 20 wherein the second circuitry is configured to shunt the electrical energy to another electrochemical device coupled in series with the electrochemical device.

24. [Original] The circuit of claim 20 wherein the first circuitry is adapted to apply the electrical energy to a lithium cell having a lithium-mixed metal electrode.

25. [Original] An electrochemical device charging method comprising:

providing an electrochemical device having an end-of-charge voltage;

charging the electrochemical device to the end-of-charge voltage;

applying electrical energy having a voltage greater than the end-of-charge voltage to the electrochemical device after the charging the electrochemical device to the end-of-charge voltage; and

shunting the electrical energy around the electrochemical device after the applying.

26. [Original] The method of claim 25 wherein the shunting comprises shunting using a passive shunting device.

27. [Original] The method of claim 25 wherein the shunting comprises shunting using a zener diode.

28. [Original] The method of claim 25 wherein the shunting comprises applying the electrical energy to another electrochemical device.

29. [Original] The method of claim 25 wherein the providing comprises providing the electrochemical device comprising a lithium cell having a lithium-mixed metal electrode.

30. [Currently Amended] An electrochemical device charging method comprising:

providing an electrochemical device coupled with a charging node;

providing electrical energy to the electrochemical device using the charging node to charge the electrochemical device, and the electrochemical device ~~assuming~~ achieving an open-circuit condition responsive to the electrochemical device obtaining a substantially charged state; and

shunting the electrical energy from the charging node after the electrochemical device ~~assumes~~ achieves the open-circuit condition.

31. [Original] The method of claim 30 wherein the shunting comprises shunting using a passive shunting device.

32. [Original] The method of claim 30 wherein the shunting comprises shunting using a zener diode.

33. [Original] The method of claim 30 wherein the shunting comprises applying the electrical energy to another electrochemical device.

34. [Original] The method of claim 30 wherein the providing the electrochemical device comprises providing a lithium cell having a lithium-mixed metal electrode.

35. [Original] The method of claim 30 further comprising electrically isolating the charging node after the shunting.

36. [Original] The method of claim 30 wherein the shunting comprises shunting using a shunting device at a first moment in time, and further comprising electrically isolating the charging node at a second moment in time using the shunting device

37. [Previously Presented] An electrochemical device charging method comprising:

providing an electrochemical device coupled with a charging node;

providing electrical energy to the electrochemical device at a first moment in time using the charging node to charge the electrochemical device;

passively shunting the electrical energy from the charging node at a second moment in time after the first moment in time; and

wherein the providing comprises providing the electrochemical device comprising a lithium cell having a lithium-mixed metal electrode.

38. [Original] The method of claim 37 wherein the passively shunting comprises passively shunting without using control circuitry to control the shunting.

39. [Original] The method of claim 37 wherein the passively shunting comprises passively shunting using a zener diode.

40. [Original] The method of claim 37 wherein the passively shunting comprises passively shunting using a breakdown device.

41. [Original] The method of claim 37 wherein the shunting comprises applying the electrical energy to another electrochemical device.

42. Canceled.

43. [Original] A method of charging a plurality of electrochemical devices comprising:

providing a plurality of a lithium cells arranged in series, the lithium cells individually having a lithium-mixed metal electrode and an end-of-charge voltage;

providing a plurality of charging nodes coupled with respective ones of the lithium cells;

providing a plurality of zener diodes, wherein at least one of the zener diodes is coupled with a charging node of a respective lithium cell and a charging node of a subsequent lithium cell;

providing electrical energy having a voltage greater than the end-of-charge voltage to a first one of the lithium cells;

charging the first lithium cell to the end-of-charge voltage using the electrical energy;

applying the electrical energy having the voltage greater than the end-of-charge voltage to the first lithium cell after the charging the first lithium cell to the end-of-charge voltage; and

shunting the electrical energy using the at least one zener diode from the charging node of the first lithium cell to the charging node of the subsequent lithium cell after the charging and the applying.

44. [Previously Presented] The apparatus of claim 1 wherein electrical energy having a voltage greater than an end-of-charge voltage of individual ones of the electrochemical devices is applied to individual ones of the electrochemical devices after the respective ones of the electrochemical devices reach the substantially charged state and prior to the shunting of the respective electrical energy.

45. [Previously Presented] The apparatus of claim 7 wherein the passive shunting device is configured to operate in selected ones of an open-circuit operational mode and a closed-circuit operational mode responsive to a voltage differential across plural power terminals of the passive shunting device and without an external signal.

46. [Previously Presented] The circuit of claim 20 wherein the electrical energy comprises electrical energy having a voltage greater than an end-of-charge voltage of the electrochemical device and wherein the first circuitry is configured to apply the electrical energy to the electrochemical device in the substantially charged state and prior to shunting of the electrical energy by the second circuitry.

47. [Previously Presented] The circuit of claim 20 wherein the second circuitry comprises a passive switching device configured to change from an open-circuit operational mode to a closed-circuit operational mode wherein the electrical energy is shunted responsive to a voltage differential across plural power terminals of the passive shunting device and in the absence of an external signal.

48. [Previously Presented] The method of claim 37 wherein the passively shunting comprises passively shunting using a passive shunting device and responsive to a voltage differential across plural power terminals of the passive shunting device and in the absence of an external signal.

49. [Previously Presented] The method of claim 37 further comprising providing electrical energy having a voltage greater than an end-of-charge voltage of the electrochemical device to the electrochemical device at an intermediate moment in time after the electrochemical device has reached a substantially charged state and prior to the second moment in time.